

Claim 12 (Original) The golf ball according to claim 2, wherein a transverse cross-section of the through orifices is rectangular.

**Remarks**

On page 2 of the Office Action, the Examiner rejected claims 1-12 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which Applicant regards as the invention. Claim 4 has been cancelled and claims 1-3, 5, and 7-10 have been amended in order to clear the indefiniteness from their respective limitations, and thus should be allowable. Accordingly, the claims should be in condition for allowance.

**Rejections under 35 U.S.C. § 102**

On page 3 of the Office Action, the Examiner rejected claims 1-5 and 11 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent 6,004,219 (Peabody '219). Applicant respectfully traverses this rejection.

Peabody '219 discloses a floating golf ball having a plurality of holes, the surface of the ball covered with a hook-type fabric for adhering to a felt or foam floating green. The plastic ball is covered with two VELCRO™ hook-type fabric strips which are secured to the surface of the ball with adhesive. The strips have a length slightly greater than the circumference of the ball and the ends of each strip are pushed into the holes of the ball.

Applicant respectfully asserts that independent claim 1 of the application is patentably distinguishable over the Peabody '219 reference. In order for a reference to

anticipate a claim, the reference must teach every element of the claim. In the instant application, claim 1 recites:

1. A golf ball comprising a sphere with peripheral channels spaced at predetermined distances on a surface of said sphere, wherein said channels cross over one another, having a portion of an air flow on a front over-pressure area communicating with a rear depression of said golf ball in its forward movement, facilitating aerodynamic air circulation therethrough to reduce resistance.

Peabody '219 does not anticipate claims 1-3 and 5-12 because it does not show the use of peripheral channels spaced at predetermined distances on the surface of a sphere, the channels crossing over one another on the surface of the sphere. Rather, Peabody '219 discloses using a hollow plastic ball composed of a plurality of holes or slots arranged in no particular manner and having strips of fabric pushed into the holes of the ball. There is no disclosure to use channels on the surface of the ball. Therefore, Peabody '219 does not anticipate claims 1-3 and 5-12.

Further, Peabody '219 does not render the present claims 1-3 and 5-12 obvious because it teaches away from the claimed invention. Peabody '219 discloses a plastic ball covered by VELCRO™ hook-type fabric strips that would increase the air resistance of the ball. Applicant discloses that the peripheral channels of the present invention that cross over one another facilitate aerodynamic air circulation through the ball, thereby reducing air resistance. The peripheral channels of the invention also facilitate rotation and lift, increasing the distance the ball travels (see page 1, line 18 through page 2, line 4 and lines 20-23 of page 2 through line 3 of page 3). Thus, Peabody 's disclosure of a

hollow plastic ball composed of holes and covered in hook-type fabric strips that increase air resistance and that extend into the holes is contrary to the claimed invention.

With respect to Figure 2, Peabody '219 discloses a hollow plastic ball for adhering to a floating green, the ball having VELCRO™ hook-type fabric strips secured to the surface of the ball with adhesive, the ball also having a plurality of holes arranged in no particular manner, into which the ends of the fabrics strips are placed. Again, the hollow plastic ball composed of holes and covered in VELCRO™ hook-type fabric of Peabody '219 cannot be arranged into the golf ball of Applicant's invention. The ball, as illustrated in Figure 3 of the present invention, discloses a sphere having peripheral channels quite different from the hollow plastic ball covered in VELCRO™ hook-type fabric discussed in Peabody '219.

Therefore, since Peabody '219 fails to teach or disclose the use of peripheral channels, or channels of any sort, Applicant respectfully submits Peabody '219 does not anticipate or render obvious any of the pending claims. Accordingly, claims 1-3 and 5-12 are allowable in view of this reference and Applicant respectfully requests a withdrawal of this rejection.

On page 4 of the Office Action, the Examiner rejected claims 1 and 10 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent 2,135,210 (Farrar '210). Applicant respectfully traverses this rejection and asserts that independent claim 1 of the application is patentably distinguishable over the Farrar '210 reference.

Farrar '210 discloses a golf ball having a plurality of circular grooves extending completely around the ball with all of the grooves parallel to each other and to the axis  $\alpha$ - $\alpha$  (see Figure 1) and a plurality of raised circular ribs which are parallel to each other and

to the axis  $a-a$  (see Figure 2). The purpose of the continuous circular grooves and ribs is to provide the ball with a plurality of parallel air-resisting surfaces, all of which extend in the same direction around the ball, that is, parallel to the axis  $a-a$ . The grooves are characterized by their boundaries which are defined by true circles, the centers of which all lie on a common axis of the ball. The surface of the ball is so formed that the tendency of the ball to curve from a straight path in flight can be in part regulated by the position in which the ball is placed prior to applying the striking force thereto.

Farrar '210 does not anticipate claims 1-3 and 5-12 because it does not show the use of peripheral channels that cross over one another. Rather, Farrar '210 discloses using a ball composed of a plurality of ribs and grooves extending around the ball arranged in a manner such that the grooves are parallel to each other, the ribs are parallel to each other, and both ribs and grooves are parallel to the axis  $a-a$ . There is no disclosure to use of peripheral channels that cross over one another and that are spaced at predetermined distances on a surface of the ball. Therefore, Farrar '210 does not anticipate claims 1-3 and 5-12.

Further, Farrar '210 does not render the present claims 1-3 and 5-12 obvious because it teaches away from the claimed invention. Farrar '210 discloses a ball covered by a plurality of ribs and grooves that serve as air-resisting surfaces. Applicant discloses that the golf ball of the present invention, including the peripheral channels that cross over one another and that are spaced at predetermined distances on the surface of the ball, provides a portion of an air flow on a front over-pressure area of the ball communicating with a rear depression of the ball in its forward movement, facilitating aerodynamic air circulation therethrough, ensuring a reduction in air resistance (see page 1, line 18

through page 2, line 4 and lines 20-23 of page 2 through line 3 of page 3). Thus, Farrar's disclosure of a ball composed of a plurality of ribs and grooves arranged parallel to each other and to the  $\alpha$ - $\alpha$  axis for the purpose of increasing air resistance of the ball is contrary to the claimed invention.

Therefore, since Farrar '210 fails to teach or disclose the use of peripheral channels that are spaced at predetermined distances and that cross over one another, Applicant respectfully submits Farrar '210 does not anticipate or render obvious any of the pending claims. Accordingly, claims 1-3 and 5-12 are allowable in view of this reference and Applicant respectfully requests a withdrawal of this rejection.

Also on page 4 of the office action, the Examiner rejected claims 1, 5-7 and 10 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent 5,879,245 (Hwang '245). Applicant respectfully traverses this rejection and asserts that independent claim 1 of the application is patentably distinguishable over the Hwang '245 reference.

Hwang '245 discloses a "spherical surface divided into spherical polyhedrons to arrange form dimples thereon, said golf ball being characterized in that at least some of said dimples are connected to one another via air connection no more than 4 mm wide, no more than 5 mm long, and no more than 1.2 mm deep, said channel depth being less then 70% of the depth of said some dimples." The spherical surface is characterized by small channels that interconnect small dimples.

Hwang '245 does not anticipate claims 1-3 and 5-12 because it does not show the use of a sphere having peripheral channels that are spaced at predetermined distances and that cross over one another. Rather, Hwang '245 discloses a spherical surface composed of short and shallow channels that do not cross over each other and that in fact do not

contact each other. There is no disclosure to use of peripheral channels that are spaced at predetermined distances and that cross over one another. Therefore, Hwang '245 does not anticipate claims 1-3 and 5-12.

Therefore, since Hwang '245 fails to teach or disclose the use of peripheral channels that are spaced at predetermined distances and that cross over one another to reduce resistance, Applicant respectfully submits Hwang '245 does not anticipate or render obvious any of the pending claims. Accordingly, claims 1-3 and 5-12 are allowable in view of this reference and Applicant respectfully requests a withdrawal of this rejection.

#### **Rejections under 35 U.S.C. § 103**

On page 5 of the Office Action, the Examiner has rejected claims 2 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Hwang '245 in view of Peabody '219.

Applicant respectfully traverses the rejections. Applicant respectfully submits that the combination of these references is not proper, as the references do not provide a motivation to combine them. Even if properly combined, the combination does not render the claims obvious. At the outset, there is no motivation within the references to combine them. Hwang '245 discloses a spherical surface divided into spherical polyhedrons that form dimples, at least some of the dimples connected to one another via air channels. Specifically, this construction allows for the flow of air through channels from one dimple to another, minimizing drag.

The Examiner states that it would be obvious to take the golf ball of Hwang '245 with the through orifices of Peabody '219 to arrive at Applicant's invention (Office

Action, page 5). However, there is no motivation to seek an improvement in the golf ball for Hwang '245, which discloses a spherical surface characterized by small channels that connect small dimples to one another, the channels themselves not contacting one another. Peabody '219 discloses a hollow plastic ball having a plurality of holes, the surface of the ball covered with a hook-type fabric for adhering to a felt or foam floating green. In particular, Peabody '219 fails to disclose peripheral channels that cross over one another and that are spaced at predetermined distances on a surface of a sphere. Thus, there is no motivation to combine the golf ball of Hwang '245 with the through orifices of Peabody '219, as the combination would result in a golf ball lacking channels which cross over one another that is contrary to the disclosure of a ball with peripheral channels that cross over one another and that are spaced at predetermined distances on the surface of the ball. Therefore, these references teach away from combining them.

Even if these references were properly combinable, Hwang '245 alone or in combination with Peabody '219 does not disclose or render obvious Applicant's invention. Specifically, this combination of references and the reasons given by the Examiner for the combination do not disclose what is required by the Applicant's claims – a sphere with peripheral channels that cross over one another and that are spaced at predetermined distances on a surface of the sphere. This combination also does not teach or suggest a golf ball expressly or inherently having the claimed requirements of Applicant's golf ball. It is advantageous to provide peripheral channels spaced at predetermined distances that are arranged such that they cross over one another. One advantage to using the peripheral channels of the present invention is the reduction of air resistance, the resulting aerodynamic perforation being greater and occurring at all

Reynolds numbers or speeds of the ball (Page 2, lines 20-23 through page 3, line 3).

On page 5 of the Office Action, the Examiner has also rejected claim 8 under 35 U.S.C. § 103(a) as being unpatentable over Hwang '245 in view of U.S. patent 4,828,265 (Antonious '265).

Applicant respectfully traverses the rejections. Applicant respectfully submits that the combination of these references is not proper, as the references do not provide a motivation to combine them. Even if properly combined, the combination does not render the claims obvious. At the outset, there is no motivation within the references to combine them. Hwang '245 discloses a spherical surface divided into spherical polyhedrons that form dimples, at least some of the dimples connecting to one another via air channels. Specifically, this construction allows for the flow of air through channels from one dimple to another, minimizing drag.

The Examiner states that it would be obvious to take the golf ball of Hwang '245 with the golf club of Antonious '265 to arrive at Applicant's invention (Office Action, page 6). However, there is no motivation to seek an improvement in the golf ball for Hwang '245, which discloses a spherical surface characterized by small channels that connect small dimples to one another, the channels themselves not contacting one another. Antonious '265 discloses a golf club having a channel-shaped cavity taking a trapezoidal configuration. In particular, Antonious '265 fails to disclose a sphere with peripheral channels, let alone a sphere with peripheral channels that cross over one another and that are spaced at predetermined distances on the sphere. Thus, there is no motivation to combine the golf ball of Hwang '245 with the golf club having a channel-shaped cavity taking a trapezoidal configuration of Antonious '265, as the combination

would result in a spherical surface having short channels with trapezoidal cross-sections that do not contact one another (e.g., not crossing over one another) but that connect dimples to each other that is contrary to the disclosure of a sphere with peripheral channels that cross over one another and that are spaced at predetermined distances. Therefore, these references teach away from combining them.

Even if these references were properly combinable, Hwang '245 alone or in combination with Antonious '265 does not disclose or render obvious Applicant's invention. Specifically, this combination of references and the reasons given by the Examiner for the combination do not disclose what is required by the Applicant's claims – a sphere with peripheral channels that cross over one another and that are spaced at predetermined distances on a surface of the sphere. This combination also does not teach or suggest a golf ball expressly or inherently having the claimed requirements of Applicant's golf ball. As explained above, it is advantageous to provide peripheral channels spaced at predetermined distances that are arranged such that they cross over one another to facilitate aerodynamic air circulation through the ball, thereby reducing air resistance.

On page 6 of the Office Action, the Examiner has rejected claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Hwang '245 in view of Peabody '219 and Antonious '265.

Applicant respectfully traverses the rejections. Applicant respectfully submits that the combination of these references is not proper, as the references do not provide a motivation to combine them. Even if properly combined, the combination does not render the claims obvious. At the outset, there is no motivation within the references to

combine them. Hwang '245 discloses a spherical surface divided into spherical polyhedrons that form dimples, at least some of the dimples connected to one another via air channels. Specifically, this construction allows for the flow of air through channels from one dimple to another, minimizing drag.

The Examiner states that it would be obvious to take the golf ball of Hwang '245, as modified by Peabody '219 with the channels having a trapezoidal cross-section of Antonious '265 to arrive at Applicant's invention (Office Action, page 6). However, as discussed above, there is no motivation to seek an improvement in the golf ball for Hwang '245, which discloses a spherical surface characterized by small channels that connect small dimples to one another, the channels themselves not contacting one another. Once again, Peabody '219 discloses a hollow plastic ball having a plurality of holes, the surface of the ball covered with a hook-type fabric, and fails to disclose peripheral channels that cross over one another and that are spaced at predetermined distances on a surface of a sphere. Antonious, which discloses a golf club having a channel-shaped cavity taking a trapezoidal configuration, also fails to disclose peripheral channels that cross over one another and that are spaced at predetermined distances on a surface of a sphere. Thus, there is no motivation to combine the golf ball of Hwang '245, as modified by Peabody '219, with the golf club having a channel-shaped cavity of Antonious '265, as the combination would result in a spherical surface covered in strips of a hook-type fabric having a plurality of holes and short channels with trapezoidal cross-sections that do not contact one another (e.g., not crossing over one another) but that connect dimples to each other that is contrary to the disclosure of a sphere with peripheral channels that cross over one another and that are spaced at predetermined

distances. Therefore, these references teach away from combining them.

Even if these references were properly combinable, Hwang '245, as modified by Peabody '219 or in combination with Antonious '265 does not disclose or render obvious Applicant's invention. Specifically, this combination of references and the reasons given by the Examiner for the combination do not disclose what is required by the Applicant's claims – a sphere with peripheral channels that cross over one another and that are spaced at predetermined distances on a surface of the sphere. This combination also does not teach or suggest a golf ball expressly or inherently having the claimed requirements of Applicant's golf ball. As explained above, it is advantageous to provide peripheral channels spaced at predetermined distances that are arranged such that they cross over one another to facilitate aerodynamic air circulation through the ball, thereby reducing air resistance.

On page 6 of the Office Action, the Examiner has also rejected claim 12 under 35 U.S.C. § 103(a) as being unpatentable over Peabody '219 in view of U.S. patent 1,483,165 (Eaton '165 ).

Applicant respectfully traverses the rejections. Applicant respectfully submits that the combination of these references is not proper, as the references do not provide a motivation to combine them. Even if properly combined, the combination does not render the claims obvious. At the outset, there is no motivation within the references to combine them. Eaton '165 discloses a golf ball formed with a roughened outer side containing rectangular holes, the outer side being roughened by ridges, pimples, or dimples. Specifically, this construction allows for a ball that is retarded and that therefore does not travel far.

The Examiner states that it would be obvious to take the through orifices of Peabody '219 with the rectangular through orifices of Eaton '165 to arrive at Applicant's invention (Office Action, page 6). However, there is no motivation to seek an improvement in the through orifices of Peabody '219, which discloses a floating golf ball having a plurality of holes, the surface of the ball covered with a hook-type fabric for adhering to a felt or foam floating green. Eaton '165 discloses a golf ball formed with a roughened outer side containing rectangular holes, the outer side being roughened by ridges, pimples, or dimples. In particular, both Peabody '219 and Eaton '165 fail to disclose peripheral channels that cross over one another and that are spaced at predetermined distances on a surface of a sphere. Thus, there is no motivation to combine the ball having a plurality of holes and covered with a hook-type fabric of Peabody '219 with the ball having an outer surface containing rectangular holes and ridges, pimples or dimples of Eaton '165, as the combination would result in a hollow plastic ball covered in hook-type fabric strips and having rectangular through orifices that is contrary to the disclosure of a ball with peripheral channels that cross over one another and that are spaced at predetermined distances on the surface of the ball. Furthermore, the rectangular through orifices of Eaton '165 are provided to render the ball sluggish, making it impossible to drive the ball more than a short distance. This is contrary to the through orifices of Applicant's claim 12, the through orifices being provided to facilitate aerodynamic air circulation through the ball and thus reduce air resistance (Page 2, lines 20-23 through page 3, line 3). Therefore, these references teach away from combining them.

Even if these references were properly combinable, Peabody '219 alone or in

combination with Eaton '165 does not disclose or render obvious Applicant's invention. Specifically, this combination of references and the reasons given by the Examiner for the combination do not disclose what is required by the Applicant's claims – a sphere with peripheral channels that cross over one another and that are spaced at predetermined distances on a surface of the sphere. This combination also does not teach or suggest a golf ball expressly or inherently having the claimed requirements of Applicant's golf ball. Once again, it is advantageous to provide peripheral channels spaced at predetermined distances that are arranged such that they cross over one another to facilitate aerodynamic air circulation through the ball, thereby reducing air resistance.

The Examiner has failed to establish a prima facie case for obviousness of claims 1-3 and 5-12. It is the Examiner's burden to show that the prior art relied upon coupled with the knowledge generally available in the art at the time of the invention must contain a suggestion or incentive that would have motivated one of ordinary skill in the art to combine references. As Applicant has set forth throughout this response, the distinctive differences between the individual references makes the combination of these references implausible. The Examiner must also show that the proposed combinations must have a reasonable expectation of success. It is inappropriate for the Examiner to use the present application as a motivation to combine the references. This inappropriate combination, taking bits and pieces from each reference in an attempt to create Applicant's invention, is exactly what the Examiner has done with these references.

Therefore, since Hwang '245, in view of Peabody '219 (for claims 2 and 11), Antonious '265 (for claim 8), Peabody '219 and Antonious '265 (for claim 9), and Peabody '219 in view of Eaton '165 (for claim 12) fail to teach or disclose a sphere with peripheral channels that cross over one another and that are spaced at predetermined distances, Applicant respectfully submits they do not anticipate or render obvious any of

the pending claims. Thus, Applicant respectfully requests reconsideration and withdrawal of the § 103 rejection as to these claims.

**Conclusion**

Having analyzed the rejections cited against the claims, it is urged that the present claims are in condition for allowance. A favorable reconsideration is requested. The Examiner is invited to contact the undersigned attorney to discuss any matters pertaining to the present application.

This amendment is accompanied with the required fee for a retroactive extension of time. The Commissioner is hereby authorized to charge any underpayment or credit any overpayment of fees under 37 CFR 1.16 or 1.17 as required by this paper to Deposit Account 18-2262.

Respectfully submitted,

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May 13 2004

Date